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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,077	06/09/2005	Young-Hoan Jun	0630-2336PUS1	7190
2292 7590 04/02/2009 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER				
HAMO, PATRICK				
ART UNIT		PAPER NUMBER		
3746				
NOTIFICATION DATE		DELIVERY MODE		
04/02/2009		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/538,077

Applicant(s)

JUN ET AL.

Examiner

PATRICK HAMO

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-8, 10 and 11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-8, 10 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This action is in response to amendments filed on 6 January 2009.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-8, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Oh et al., U.S. Patent No. 6,289,680.

Oh discloses an operation control apparatus for a compressor 11 comprising: a stroke estimating unit 32 for estimating a stroke of the compressor on the basis of a current $[(V0 - V1) / R]$ and a voltage $(V2 - V3)$ applied to an interior motor 10 of the compressor and a motor constant of the interior motor; a control unit 33 for generating a control signal for varying a stroke of the compressor on the basis of the estimated stroke value and a preset stroke reference value 31; and a current control means Tr for varying a stroke voltage applied to the interior motor of the compressor in accordance with the control signal;

wherein an OLP (Over Load Protector) and/or a PTC thermistor (Positive Temperature Coefficient thermistor) are not used for the operation control apparatus;

wherein the control unit outputs the control signal for increasing the stroke voltage applied to the compressor when the compressor is initially driven, to the current control means (processed through gate G in fig. 12);

wherein, when the estimated stroke value is smaller than the stroke reference value, the control unit increases a voltage applied to the compressor by lengthening an on/off period of the current control means, and, when the estimated stroke value is greater than the stroke reference value, the control unit decreases a voltage applied to the compressor by shortening the on/off period of the current control means (implied in that the stroke value is directed to be substantially the same as the reference value, column 4, lines 45-55);

detecting means 32 for detecting a current and a voltage which are applied to a compressor; a storing means (memory tmp_s) for presetting a standard current value for preventing an overcurrent generated when the compressor initially starts, and storing the set standard current value; a comparing means for comparing the detected current value and the standard current value, and outputting a comparing signal (to gate G) corresponding to the comparing result; and a control means 33 for cutting off a current applied to the compressor by turning off a current control means Tr installed at the compressor by the comparing result, or for controlling a stroke voltage V2—V3 applied to the compressor by turning on/off the current control means at a certain period;

wherein the current control means is one of a triac Tr, a GTO transistor (gate turn-off transistor), an IGBT (Insulated Gate bipolar Transistor), a bipolar transistor and a relay;

wherein the compressor is installed at a refrigerator (column 9, lines 24-31);

wherein the control means cuts off a current applied to the compressor by turning off the current control means Tr when the detected current value is greater than the standard current value; and compares the stroke value estimated based on the detected voltage value, the detected current value and a motor constant of an interior motor of the compressor with the preset stroke reference value, and then varies a stroke of the compressor on the basis of the comparing result when the detected current value is smaller than the standard current value;

and a method for controlling an operation of a compressor comprising the steps of; detecting a current $([V0 - V1] / R)$ and a voltage (V2-V3) applied to the compressor; estimating a stroke of the compressor on the basis of the detected values of the current and the voltage and a motor constant of an interior motor of the compressor; when the estimated stroke value is smaller than a preset stroke reference value, increasing a voltage applied to the compressor by lengthening an on/off period of a current control means installed at the compressor (see fig. 11), and when the estimated stroke value is greater than a preset stroke reference value, decreasing a voltage applied to the compressor by shortening the on/off period of the current control means;

and a method for controlling an operation of a compressor comprising: detecting a current $([V0 - V1] / R)$ applied to the compressor; comparing the detected current value and a preset standard current value; cutting off a current applied to the compressor by turning off a current control means installed at the compressor when the detected current value is greater than the standard current value; and when the

detected current value is the same as or smaller than the standard current value, estimating a stroke of the compressor, and controlling a stroke voltage applied to the compressor by turning on/off the current control means at a certain period on the basis of the estimated value and the preset stroke standard current value.

Response to Arguments

Applicant's arguments filed 6 January 2009 have been fully considered but they are not persuasive.

Applicant argues that the reference to Oh fails to read on the limitations presented because there is no teaching or suggestion of using the current applied to the compressor in the stroke estimator. However, resistor R is provided to determine the current supplied to the compressor, with voltage readings V0 and V1 taken before and after the resistor such that $(V0-V1)/R$ is the current supplied to the compressor and this current information is supplied to the stroke controller to control the stroke of the compressor.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PATRICK HAMO whose telephone number is (571)272-3492. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Charles G Freay/
Primary Examiner, Art Unit 3746

/Patrick Hamo/
Patent Examiner, AU 3746